REMARKS

Claims 1-7 remain in the application, with claims 1 and 7 being in independent form. New independent claims 8 and 9 have been added hereby.

The claims have been carefully reviewed with particular attention to the points raised in the Office Action. It is submitted that no new matter has been added and no new issues have been raised by the present response.

Reconsideration is respectfully requested of the rejection of claims 1-7 under 35 U.S.C. § 103(a), as allegedly being unpatentable over U.S. Patent No. 6,111,857 to Soliman et al.

Applicants have carefully considered the comments of the Office Action and the cited reference, and respectfully submit that claims 1-7 are patentably distinct over the cited reference for at least the following reasons.

The present invention relates to a method for automatically designing cellular mobile radio telephone networks. A design of a cellular mobile radio telephone network or subnetwork for a new planning area is automatically generated using available planning data for existing, planned, or abstract cellular mobile radio telephone networks and the space-related data of their planning areas and the space-related data of the new planning area. Relationships between the space-related reference and planning data are processed, and coordinate and angle transformations are applied to the site coordinates of the base stations and main beam directions of antennae of the base stations of the reference data.

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Soliman et al., as understood by Applicants, relates to a method and apparatus for planning a wireless telecommuni-cations network. An electronic representation of a wireless telecommunications system can be configured within a given market area and the operation of the telecommunications system simulated. The simulation is performed using a set of databases that contain terrain and population information associated with the market area over which the wireless network is configured.

To perform the simulation, Soliman et al. generates a composite propagation loss matrix and a demand and service vector using the terrain and population information, as well as the configuration of the wireless telecommunications network. Once the composite propagation loss matrix and the demand and service vector are generated, analyses of the reverse link and of the forward link are performed. During both the reverse and forward link analyses multiple iterations are performed until a stable result is achieved. Upon completion of the reverse and forward link analyses, the results of the simulation are displayed in a graphical manner for examination.

The Office Action states that Soliman et al. discloses all of the presently claimed invention, as defined in claims 1-7, including a method for automatically designing cellular mobile radio telephone networks from network-related reference data including existing planning data of implemented, planned, or abstract cellular networks (see Office Action, p. 2, lns. 12-19).

As understood by Applicants, Soliman et al. uses a

computer and display screen to store, process, and display data for performing planning of wireless networks (see Soliman et al., col. 5, lns. 11-59; Figs. 1-2).

The geographic and environmental information of Soliman et al. may include altitude and terrain information associated with an evenly-spread set of x-y coordinates, referred to as "bins" (see id., lns. 64-67; col. 7, lns. 13-29). The data include an electronic representation of the layout of a wireless telephone system (see id., col. 6, lns. 1-2).

The environmental information of Soliman et al., as understood by Applicants, is displayed on the display screen of the computer to form a graphical representation of the terrain of the simulation area (see id., lns. 20-59; Fig. 3). Simulation parameters may be entered by a user via a menu bar and dialog boxes, and base stations may be located and moved on the display screen through use of a mouse and cursor (see id.).

The simulation of Soliman et al. is performed by the computer and includes generation of a propagation loss array, initialization of a demand and service vector, and performance of reverse and forward link analyses (see id., col. 7, lns. 13-64; Fig. 4). After the base stations have been located, the simulation is performed and the results displayed on the display screen in various formats (see id., col. 6, lns. 59-65; col. 8, lns. 2-5).

It is respectfully submitted, however, that Soliman et al. does not disclose or suggest a method for automatically designing cellular mobile radio telephone networks.

As understood by Applicants, the system of Soliman et al. relies upon manual selection and location of the elements of the simulated network by the user, such as base stations (see id., col. 6, lns. 33-37; lns. 46-59). Base stations may be placed, moved, and oriented within the simulation by manipulation of a mouse, selection button, and/or keyboard (see id.). Network simulation is performed after the base station locations have been manually determined, as described above (see id., lns. 59-65).

That is, the system of Soliman et al. is a tool for the simplification of a network planning process, and provides a mechanism for utilizing a computer to simulate a designed network over a specific market area (see id., col. 5, lns. 60-64).

In contrast, in the method of the present invention, a design of the cellular mobile radio telephone network or subnetwork for the new planning area is automatically generated by processing the relationships between the space-related reference and the space-related data of the new planning area and application of coordinate and angle transformations to the site coordinates of the base stations and main beam directions of the antennas of the reference data base stations, as recited in independent claim 1.

That is, the method of the present invention relates to the conversion of existing mobile radio telephone network or subnetwork information into a network design for a new planning area (see specification of the present application, p. 12, lns. 8-11). A design for the new network is

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automatically generated from previously produced planning data
of implemented, planned, or abstract cellular networks or
subnetworks (see id., p. 5, lns. 4-16).

It is respectfully submitted that, as understood by
Applicants, the wireless planning tool of Soliman et al.
provides a mechanism for simulation of a designed network, but
does not disclose or suggest automatic generation of a network
design.

Furthermore, it is respectfully submitted that Soliman et
al. does not disclose or suggest the use of transformations on
antenna coordinates and main beam directions.

As understood by Applicants, the network planning of
Soliman et al. begins with the receipt of information that is
generated before performance of the simulation, via
measurement or existing databases (see Soliman et al., col. 7,
lns. 13-43). The received information includes the terrain
data, a base station database and associated location
information, and population information (see id.). The
terrain data consist of vertical height of the simulated
market area, and the base station database includes the number
of base stations, X-Y coordinate locations for each base
station, and a vertical height of each base station antenna
(see id.). The vertical height of base station antennas may
be set by the user or stored in a preconfigured database (see
id.).

In contrast, in the present invention, design of the
cellular mobile radio telephone network or subnetwork for the
new planning area is automatically generated by processing

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relationships between the space-related reference and the space-related data of the new planning area. Operations are performed which implement conversions from the state of the previously-produced network or subnetwork into the state of design for a new planning area (see specification of the present application, p. 12, lns. 8-11).

The operations may include mapping of sites of the base stations of the reference area onto the planning area by coordinate transformation of the base station sites into geographical longitude, latitude, and rotation (see id., lns. 19-23). Additionally, the operations may include angle transformation of the main beam directions of the antennas of base stations (see id., lns. 24-26).

The present invention may utilize an assumption that geographic areas having identical or very similar space-related features can be supplied by mobile radio telephone networks or subnetworks which are identical or very similar apart from space-related parameters such as coordinates of base stations and main beam directions of antennas, and that therefore two geographic areas having identical space-related features can be represented by identical space-related data contents which can be processed by machine (see id., p. 9, lns. 4-13).

These features may be used, for example, to transform an existing base station allocation of a previously-planned area in order to determine an allocation of the new planning area (see id., p. 10, lns. 10-16).

Additionally, the Office Action notes that Soliman et al.

fails to disclose use of existing planning data of implemented, planned, or abstract cellular mobile radio telephone networks or subnetworks (see Office Action, p. 3, lns. 1-3).

It is respectfully submitted that there is no suggestion or motivation in Soliman et al. for the use of existing planning data of implemented, planned, or abstract cellular mobile radio telephone networks or subnetworks in automatic generation of a network design, in the manner suggested by the Office Action. Furthermore, it is respectfully submitted that the Office Action has not provided evidence that such a use would have been well-known in the art to which the present invention is directed.

As stated by the Court of Appeals, Federal Circuit, motivation to combine or adapt must be supported by evidence in the prior art, as opposed to merely through conclusory statements. See In re Thrift, 298 F.3d 1357 (Fed. Cir. 2002).

Regarding the rejection of claim 6, it is respectfully submitted that Soliman et al. does not disclose changing of space-related parameters, site coordinates, and antenna main beam directions of a real or abstract network, and substitution of the changed information into the planned network.

In the method recited in claim 6 of the present invention, for a mobile radio telephone network or subnetwork to be planned on a geographic area, a real or abstract mobile radio telephone network or subnetwork on a real or abstract geographic area is changed in space-related parameters, site

coordinates, and antenna main beam directions. Coordinate transformation is used to substitute the geographic longitude, latitude, and rotation of the planned subnetwork, with respect to the zero meridian at the precise instant when the features of the space-related data of the geographic areas are equal or equal in accordance with a particular criterion.

That is, it is respectfully submitted that the method of Soliman et al. relates to a simulation process, rather than to a mapping or substitution process for automatically generating a design for a cellular network for a new planning area.

It is respectfully submitted that Soliman et al. does not disclose or suggest a method for automatically designing cellular mobile radio telephone networks, wherein, from existing planning data of implemented, planned or abstract cellular mobile radio telephone networks or subnetworks and the space-related data of their planning areas, including network-related and space-related reference data, and the space-related data of a new planning area, a design of the cellular mobile radio telephone network or subnetwork for the new planning area is automatically generated by processing the relationships between the space-related reference and the space-related data of the new planning area and application of coordinate and angle transformations to the site coordinates of the base stations and main beam directions of the antennas of the base stations of the reference data, as recited in independent claim 1.

Accordingly, for at least the above-stated reasons, it is respectfully submitted that independent claim 1, and the

claims depending therefrom, including claims 2-6, are patentable over the cited reference. Independent claim 7 is believed to be patentable over the cited reference for at least similar reasons.

Withdrawal of the rejection of claims 1-7 is respectfully requested.

New claims 8 and 9 similarly are submitted to be patentable over the cited reference for the reasons stated above.
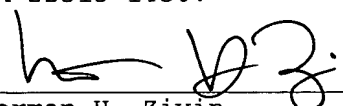
The Office is hereby authorized to charge any fees which may be required in connection with this response and to credit any overpayment to Deposit Account No. 03-3125.

Favorable reconsideration is earnestly solicited.
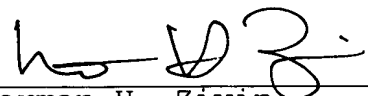
Respectfully Submitted,

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I hereby certify that this paper is being deposited this date with the U.S. Postal Service as first class mail addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

4/26/04

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